

Edgar F. Cynait

[Reprint from THE CLEVELAND MEDICAL JOURNAL, February, 1906.]



The Function of Therapeutic Exercises in Lateral Curvature

HENRY O. FEISS, CLEVELAND, O.

In the condition called lateral curvature of the spine, it is important to remember that we are dealing, not merely with a local deformity, but one which implies a general change in shape in the entire torso, and often in parts more distant, so that we must not be tempted to direct our efforts upon the spinal column taken by itself.

It is also important to remember that we are dealing with a non-organic condition in the great majority of cases, a condition brought on, not by disease in the bones, not by disease in the soft parts, but by muscular weakness and insufficiency, or by disproportion between muscular strain and ligamentous maintenance.

The condition usually takes place as a result of faulty position, faulty in being insufficient for purposes of shapely balancing. Then if the position or attitude which was physiological in the start is prolonged so much as to become habitual, lateral curvature results.

At the start habitual cases are usually manifested by long sweeping curves of the spinous processes, with or without a prominent hip, and usually with a slight dorsal convexity on one side of the thorax. It is this developing type in which therapeutic exercises have a most important scope, for such a curve is often the beginning of a more marked and rigid deformity, so that to get hold of these cases early is most satisfactory. We often find that in these early cases mere mental stimulation is enough to bring the torso into symmetry and beauty of contour. If such mental stimulation is sufficient, a few active or passive motions carried out systematically at regular intervals for a certain period of time may indeed be all that is required to divert nature's progress

from the pathological path back into the physiological. This mental effort cannot be emphasized too strongly, as a person carrying out certain therapeutic exercises with a view to holding himself correctly, will at times, when he is not exercising, unconsciously attempt to hold himself in what he is taught to be the best possible attitude. If the effect of these exercises is to be gotten quickly it implies that the beginning deformity has not come into a fixed stage, that all motion between the vertebrae, which is normal is still present, that ligaments are still firm and of symmetrical strength, and that the muscles are not too far weakened.

We come next to a type which represents a stage when distortion has actually begun, and just begun, when the dorsal region of the spinal column, with the thorax attached, has twisted as such upon the underlying torso, and when the long convex sweep has already become fairly permanent, so that even if the patient is reminded to straighten himself up, and taught how, the deformity cannot be quite obliterated. The function of exercises in these cases is a more direct one. Whatever the cause of these cases be, we can always figure on a symmetrical muscular strain, because even if muscular weakness has not been a factor in the etiology, this muscular weakness is bound to come in time, to one side or the other in different sets of muscles, because the origin and insertion points gain different relative positions on the two sides. This, indeed, is rather an unbalancing than a true weakness, and may be regarded as such. The function of exercises here is to make up for the insufficiency by cultivating the individual use of certain muscles or sets of muscles, as well as to bring about a subjective understanding for using these muscles actively, so that the total result is towards a symmetrical balancing of the body. If deformity is at all marked, as in the ribs, or in the column itself, we resort to manipulative methods applying pressure and leverage force in such a way as to counteract the vicious tendencies of nature, using of course, the simplest possible measures.

We next come to a set of cases which may be regarded as less hopeful, but in which radical improvement is still implied, providing the condition is well enough understood, that the separate elements may be analyzed and worked upon with more individual care. We find in these cases a rather marked lateral dorsal curve of the spinous processes, and a sharp posterior rib deformity on the convex side of the curve. Marked folds usually appear under the opposite scapula, and over the corresponding



hip, which is also prominent. There may be inequality in the length of the legs and sloping of the pelvis. This is only a rough description of a very common type. If we dissected such a torso we would find that the fronts of the bodies of the dorsal vertebrae have rotated towards the side of the convexity of the curve and that the lumbar vertebrae have rotated in the opposite direction, but we need only look at the rib prominence to see how fixed and permanent the pathological anatomy has already become. The principle of dealing with such a case is somewhat different from those in which the prognosis is more favorable, for in these the curves and contours have already affected the shape of the bones to greater or less degree. We must in the first place assume that asymmetry once begun, the tendency for greater asymmetry becomes proportionately greater. In other words, the fact that the patient is already deformed is usually a pretty good sign that the deformity is going to get worse and that we ought to do everything possible to counteract this tendency. In the second place we ought to understand that even if we cannot mould the patient's back into its original shape we may be able to give it an apparent symmetry which for practical purposes may be all that is required. For example, given a definite and fixed curve in the spinal column we may not be able to obliterate that curve, but we may be able to give a compensatory curve which throws the body into a better balance. We can further by stretching the spinal column with appropriate apparatus bring about a general obliteration of all the curves by doing which we are at the same time stretching many of the tightened muscles and fascia which span an arc of the curve, like the bow-string of a bow.

If we gain a definite amount of flexibility especially in the lumbar region, and it is only in this region that we can hope for much gain, we can often bring about sufficient play to let the rest of the spine assume a more symmetrical attitude. In the dorsal region we can never hope, after the column has become fixed, to regain a great amount of flexibility in toto and our aim is usually to make the lateral curve turn so as to become a posterior convexity.

All force brought to bear upon the rib deformity ought to be exerted with a view to doing everything possible to bring the column itself back into the straight. This not only means a correct application of the force itself, but the correct application of counter force or resistance, because the whole thorax takes part in the deformity and if the resistance is not furnished in the cor-

rect relation to the pressure this very resistance may do more harm than the correcting force is doing good. An admirable way to bring about correct pressure is to put the whole body on a stretch and then apply pressure upon the rib deformity, or second, to hyperextend the body and bring the force to bear in that way. In the ribs, the most we can hope for at first by application of pressure is to gain a flexibility which will permit the straightening column to pull correctly upon the convexity in the ribs.

It is not our purpose to go into the details of the application of the various kinds of exercises which may be used. We wish simply to hint at the relation between the function and the application and we may be able to see from this slight sketch that the first function is to cultivate the active forces in the muscles both by mental stimulation and local practice, secondly, to bring into play a certain power of mobility in such joints which has become comparatively fixed by the pathological process, and thirdly, to stretch all factors, which on account of their tightness would interfere with such mobility as we are able to gain.

WELLCOME INSTITUTE LIBRARY	
Coll.	wellcome
Coll.	gam
No.	WE 720
	1 906
	F 31 f